



**CP-2500**

**OPERATION & INSTALLATION**

**MANUAL**



The **Muzak CP-2500** is a four-hour, continuous play cassette deck with a built-in 25-watt amplifier.

This high-efficiency, single cassette transport unit plays Muzak's specially formatted tapes, so you'll enjoy four hours of uninterrupted, non-repeating music. And its auto-reverse feature gives you continuous play until you're ready to change tapes. The unit is also equipped with **volume** and **tone** controls and simple push-button controls for **play**, **rewind**, and **stop**.

This cassette deck is designed for commercial environments, with a four-track format and an LED (Light Emitting Diode) display that lets you monitor which track is playing. Its built-in Dynamic Noise Reduction\* (DNR) assures a crisp, clean, full range of sound. And its compact, contemporary design means it fits anywhere.

One of the best features of the CP-2500 is its built-in 25-watt amplifier, eliminating the need and cost of a separate amplifier. If extra amplification is desired, this unit allows you to bypass the internal 25-watt amplifier and connect to an amplifier that fits your needs.

Best of all, it's from Muzak! That means your tapes will carry only superior quality music selections artistically designed to create an experience for your customers and employees. Plus, you'll have the ongoing support of Muzak nationwide sales and service network.

**Muzak — creating experiences with audio architecture.**

\*DNR is a registered trademark of National Semiconductor.

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## specifications

<b>POWER SOURCE:</b>	120 V AC 60 Hz
<b>POWER CONSUMPTION:</b>	50 W at rated output
<b>OUTPUT POWER:</b>	25 W at 4 $\Omega$ or 70 volts
<b>LINE OUTPUT:</b>	0 dBV (1 volt) +/- 2 dB
<b>DISTORTION:</b>	<1.5% (at 1 kHz)
<b>SIGNAL/NOISE RATIO:</b>	>50 dB
<b>CROSSTALK:</b>	>40 dB
<b>FREQUENCY RESPONSE:</b>	50 Hz-13 kHz
<b>TAPE:</b>	Cassette tape C-90, Type I
<b>TAPE SPEED:</b>	3.57 cm/sec., < +/- 1% (3/4 of standard speed)
<b>TRACK CONFIGURATION:</b>	4 track mono, auto reverse (25 Hz detector)
<b>WOW &amp; FLUTTER:</b>	<.25%
<b>REWIND TIME:</b>	<140 sec.
<b>PLAYBACK HEAD:</b>	4 track/2 channel
<b>MOTOR:</b>	DC motor
<b>NOISE REDUCTION:</b>	Dynamic Noise Reduction (DNR)
<b>tone controls:</b>	Bass and treble, > +/- 8 dB
<b>FINISH:</b>	Front panel-injection mold
<b>DIMENSIONS:</b>	9.45" W x 12.6" D x 4.33" H
<b>WEIGHT:</b>	12.1 lb. (5.5 kg)
<b>SHIPPING WEIGHT:</b>	15 lb. (6.8 kg)
<b>TEMPERATURE:</b>	32-113 deg. F (0-45 deg. C)
<b>HUMIDITY:</b>	0-95% (no condensation)
<b>PARTS INCLUDED:</b>	Operation and Installation Manual Patch cord Cleaning kit
<b>SAFETY STANDARDS:</b>	UL, C/UL, FCC-B
<b>WARRANTY:</b>	90 days on transport mechanism; 1 year on circuitry and chassis

# general installation instructions

## CAUTION

1. Plug deck into grounded 120 V AC outlet. If a grounded outlet is not available, use an AC outlet adapter available from local hardware or electrical stores. Follow the instructions supplied with the adapter.
2. **Do NOT remove the round ground pin from the AC plug.**
3. Always use replacement fuses of the proper rating. The CP-2500 requires a 5x20 mm GMA 1.6 amp/250 volt fuse. You may substitute a GMA 1.5 amp/250 volt fuse if you are unable to find a 1.6 amp fuse. If the fuse continues to blow, there may be a fault in your speaker wiring or in the deck. Call your local Muzak Affiliate for service.
4. Unplug the deck in the event of lightning. High voltage surges may cause damage to the circuitry.
5. Do not block the top cover air vents; overheating may result.

## LOCATION

1. Locate the deck where there is good air circulation, low dust, low humidity and normal room temperature.

**NOTE:** Do not locate in direct sunlight or near heating units. Avoid kitchen areas where grease, smoke or steam may contact the deck.

# front and rear panel descriptions

## FRONT PANEL

### 1. CASSETTE DOOR

Open the cassette door for changing the cassette or cleaning the cassette mechanism. Load the cassette with the label and program number facing out.

### 2. EJECT BUTTON

Press the **eject** button to open the cassette door.

### 3. LED INDICATOR

The **LED** (Light Emitting Diode) **indicator** displays the operational status of the deck.

All LEDs off indicates the power is **off**.

A single flashing LED indicates the **standby** mode.

An LED on continuously indicates the **play** mode and the music track.

All four LEDs moving in sequence indicates the **rewind** direction.

### 4. VOLUME CONTROL

Turning this control sets the volume of the line output and the audio output (amplifier output).

### 5. POWER

Pressing this turns the power on and off.

**NOTE:** Power will come **on** when the power cord is first plugged in.

### 6. SELECT

Pressing this will **change** the music track.

## 7. PLAY

Pressing this will **play** the cassette.

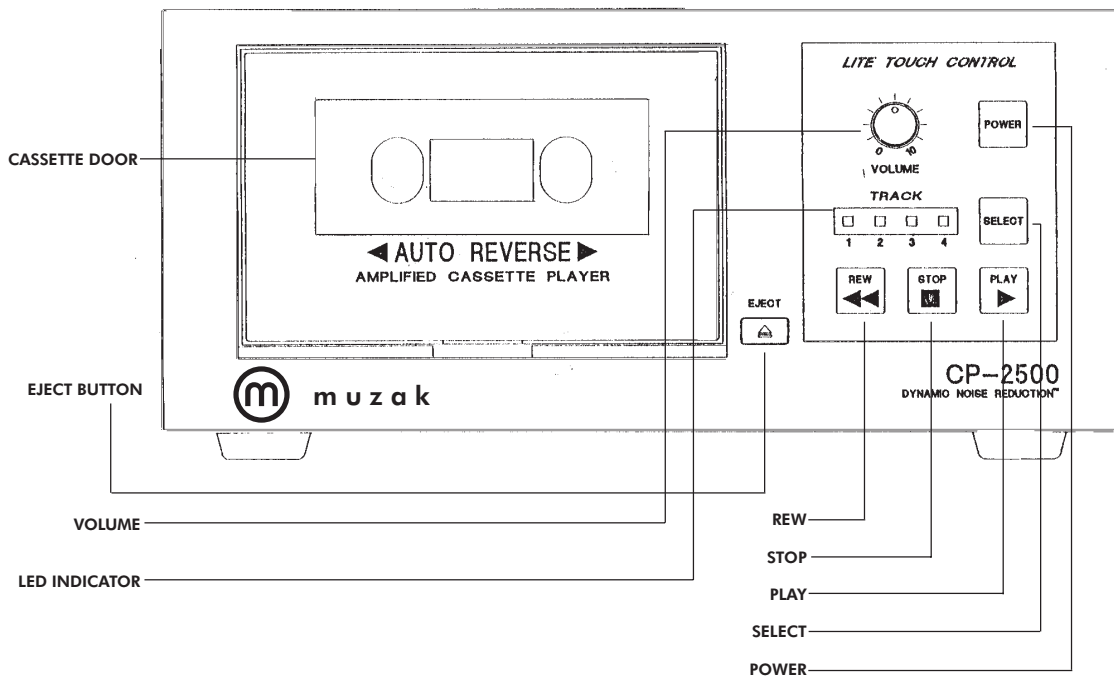
**8. STOP**

Pressing this will **stop** the cassette.

## 9. REW

Pressing this will **stop** the cassette and **commence** rewinding.

**NOTE:** Because the CP-2500 is an auto-reverse deck, rewind is always relative to the direction of play.



## REAR PANEL

### 1. LINE OUT

These terminals are for connecting the CP-2500 to a separate amplifier. Leave these terminals disconnected if you are connecting your speakers to the built-in amplifier (Audio Output). See page 7.

Connect the + terminal to the **“hot”** or center conductor of the supplied patch cord.

Connect the - terminal to the **“ground”** or shield conductor of the supplied patch cord.

### 2. REMOTE CONTROL

The remote control terminals are for starting and stopping the deck from a remote location:

Shorting the **start** terminal to the **ground** terminal through a remote switch will place the deck in the play mode.

Shorting the **stop** terminal to the **ground** terminal through a remote switch will place the deck in the stop mode.

### 3. BASS & TREBLE CONTROLS

Turning these controls will increase or decrease the amount of bass and treble.

### 4. AUDIO OUTPUT

Connect these terminals to your speaker wires. See the connection diagrams on page 8 for more details.

The 4  $\Omega$  (ohm) terminals are for speakers **without** transformers which are labeled 4 or 8  $\Omega$ .

The 70 V (volt) terminals are for speakers **with** transformers which are labeled 70 V.

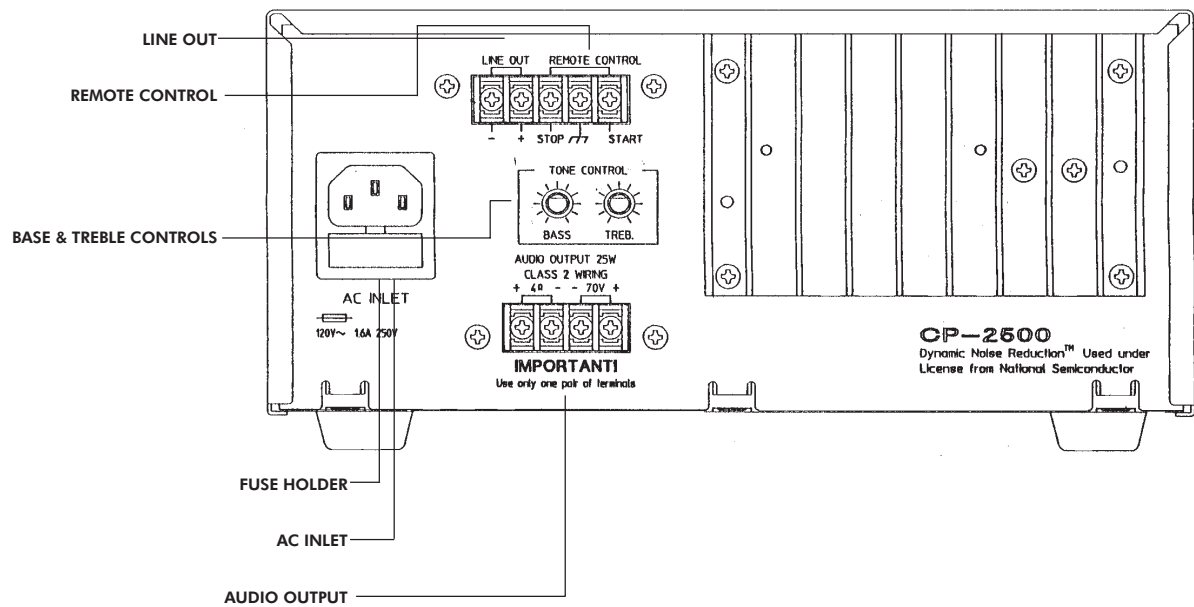
### 5. AC INLET

Connect the detachable AC power cord to this receptacle.



## 6. FUSE HOLDER

This holds the AC line fuse. The AC power cord must be removed to gain access to the fuse. See page 14 for details on fuse replacement.



## connection instructions

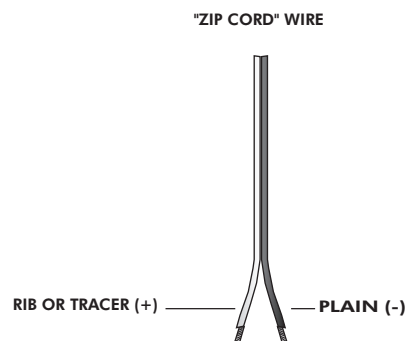
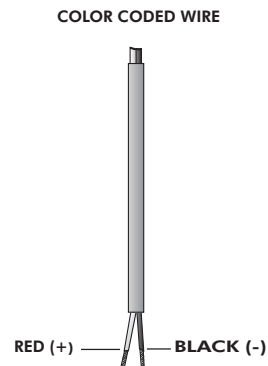
A majority of commercial speaker installations are 70-volt systems. Relatively few are 4  $\Omega$  or 8  $\Omega$ . This is determined at the time of installation. 70-volt systems can be identified by the presence of a transformer mounted on each speaker or the 70 V label. If in doubt, consult the local Muzak Affiliate who installed the system.

**NOTE:** When connecting an 8  $\Omega$  speaker load to the CP-2500 4  $\Omega$  terminals, the output power is 15 watts. A 16  $\Omega$  speaker load is not recommended due to the reduced output power.

The CP-2500 **volume** control adjusts both the amplifier **audio output** and the **line out**.

Proper positive (+) and negative (-) polarity must be maintained throughout your speaker wiring. There are two types of speaker wire commonly used. The first type is **color coded** red (+) and black (-). The second type, sometimes referred to as **zip cord**, is polarized with a ribbed or striped conductor (+) and a plain conductor (-).

See the wiring diagrams to the right for additional details.

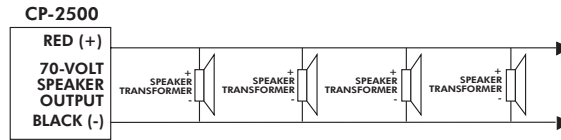


### CONNECTION TO A 70 V SPEAKER SYSTEM:

Connect the CP-2500 70 V + (red) push terminal to the positive speaker wire.

Connect the CP-2500 70 V - (black) push terminal to the negative speaker wire. See diagram on next page.

## 70-VOLT SPEAKER/TRANSFORMER WIRING DIAGRAM (CONNECT TO 70-VOLT TERMINALS)

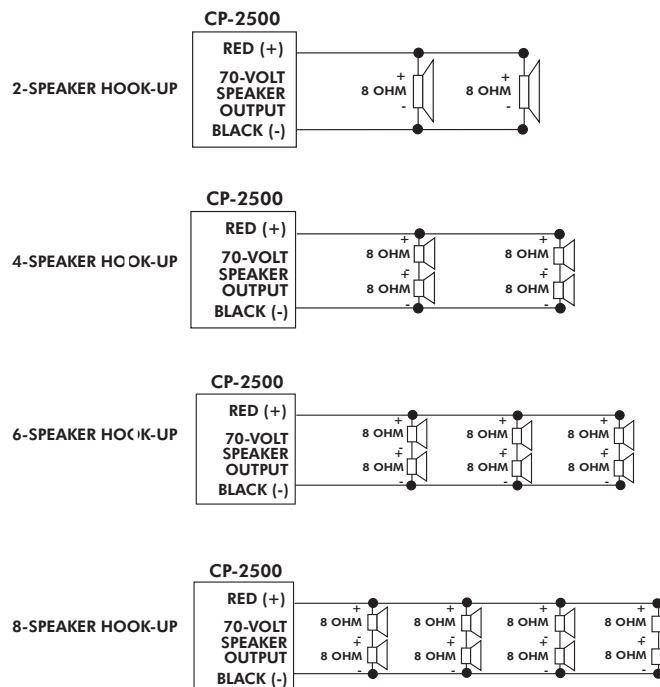


## CONNECTION TO 4-8- $\Omega$ SPEAKER SYSTEM:

Connect the CP-2500 4  $\Omega$  + (red) push terminal to the positive speaker wire.

Connect the CP-2500 4  $\Omega$  - (black) push terminal to the negative speaker wire.

## 8 $\Omega$ SPEAKER WIRING DIAGRAM (CONNECT TO 4- $\Omega$ TERMINALS)



## separate amplifier connection

Larger speaker systems (more than 10 speakers) may require a higher wattage amplifier than the built-in 25-watt amplifier. A separate amplifier must be connected to the CP-2500 **line out** screw terminals. The CP-2500 accessory kit contains a patch cord with stripped bare wires on one end and a phono (RCA) plug on the other end for this purpose. It is okay to connect the **line out** and **audio output** terminals at the same time.

Connect the patch cord center conductor to the **line out** + terminal.

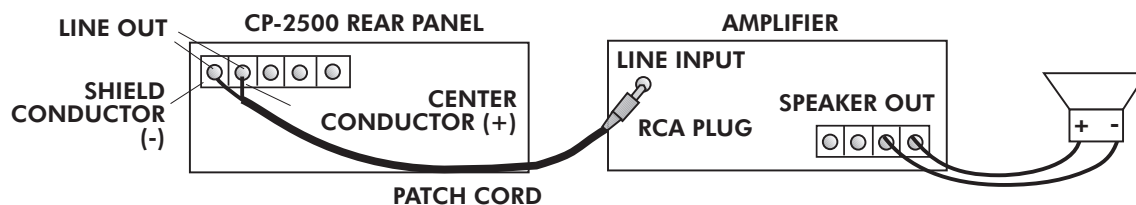
Connect the patch cord shield (ground) conductor to the **line out** - terminal.

Connect the phono (RCA) plug on the other end to the separate amplifier's **program, aux,** or **line** input.

Connect the speaker wires to the separate amplifier 70-volt, 4  $\Omega$ , or 8  $\Omega$  speaker terminals depending on your speaker system.

**NOTE:** Do not set the CP-2500 Volume or separate amplifier volume extremely low or high (below 9 o'clock or above 3 o'clock). For instance: do not set the volume very low and then compensate for it by setting the separate amplifier volume very high.

The marking for the negative speaker terminal varies with different brands of amplifiers. Neg, -, Com, and Gnd all refer to the negative or speaker "ground" connection. Consult the amplifier owner's manual for more details.



## remote control connections

### REMOTE STOP

Connect a momentary contact switch between the **remote stop** and **ground** terminals.

The CP-2500 will stop when the switch is closed.

### REMOTE START

Connect a momentary contact switch between the **remote start** and **ground** terminals.

The CP-2500 will start to play when the switch is closed.

## o p e r a t i n g   t h e   C P - 2 5 0 0

Operating the CP-2500 is very similar to operating a consumer format, auto-reverse cassette deck.

**NOTE:** The cassettes for the CP-2500 are a **proprietary format** and will not play correctly on a consumer cassette deck. Conversely, consumer cassettes will not play correctly on the CP-2500.

1. Attach the enclosed AC power cord to the AC inlet on the CP-2500 rear panel.
2. Plug the AC power cord into a grounded (3 prong) 120-volt AC outlet. **DO NOT REMOVE THE ROUND GROUND PIN FROM THE AC PLUG.**  
**NOTE:** The CP-2500 is designed so the power will come on as soon as the AC power cord is plugged in. This is normal operation. **Power on** is indicated by the illumination of one of the track indicators or LEDs (light emitting diodes).
3. Press the **eject** button and insert the cassette with the program label and screws facing forward and the tape opening facing down.
4. Press the **play** button.
5. Set the **volume control** for the desired volume level.
6. Set the rear panel **bass** and **treble** controls for the desired tone balance.
7. The cassette will play continuously (auto-reverse format) until the **stop**, **rew** (rewind), or **power** buttons are pressed.

**NOTE:** Because the CP-2500 is an auto-reverse cassette deck, rewind is always relative to the play direction. This is the same as an auto reverse car stereo cassette deck.

The rewind direction is indicated by the sequencing of the track LEDs.

It is not necessary to press **stop** when going from play to rewind or vice versa.

8. Press the **select** button to change music tracks. The cassette will advance one track and change directions each time the select button is pressed.

**NOTE:** Both the play and rewind directions are reversed by the select button. This allows you to fast rewind (or fast forward) in either direction by pressing the select button.

## routine maintenance

There are two cleaning methods. Muzak supplies alcohol and swabs with your CP-2500 cassette deck. Additional cleaning kits may be ordered from Muzak's Customer Services at **800 223.0686**. Other sources of cassette cleaning kits are: local music and video stores, local stereo stores, and local Radio Shack stores. It is **extremely important** to clean the playback head, the two capstan shafts and the two rubber pinch rollers once a week. This is even more important if the CP-2500 is used in a hot and/or humid environment.

### CLEANING CASSETTE METHOD:

The cleaning cassette is the easiest way to keep your CP-2500 clean, but must be used weekly to be effective.

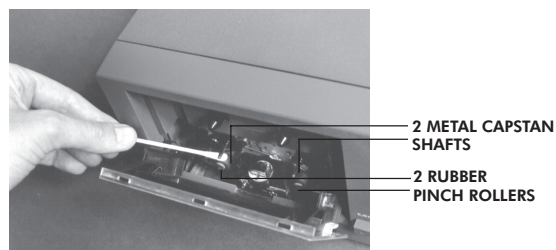
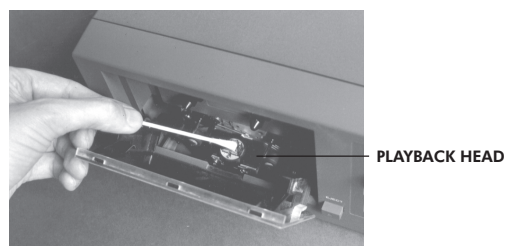
1. Follow the directions supplied with the cleaning cassette.
2. Apply several drops of cleaning fluid to the felt pads.
3. Insert the cleaning cassette and press **play**. Play for 10-20 seconds and press **select** to reverse the mechanism.
4. Play the cleaning cassette in the reverse direction for an additional 10-20 seconds and then remove it.
5. Let the cleaning fluid dry for 10 to 20 seconds before playing an audio cassette. **THIS DRYING PERIOD IS EXTREMELY IMPORTANT TO PREVENT TAPE DAMAGE.**

### ALCOHOL & COTTON SWABS METHOD:

Alcohol and cotton swabs are less convenient to use but are more effective on a dirty mechanism. Do this if the cleaning cassette fails to remove all visible dirt and tape oxide (metallic powder).

1. Press the **eject** button and remove the music cassette.
2. Moisten a cotton swab in alcohol so it is wet but not dripping.
3. Rub the swab on the playback head, the two capstan shafts and the two rubber pinch rollers.

**NOTE: Never** attempt to clean the mechanism with sharp or metallic objects.



## troubleshooting

In the event of a problem with your CP-2500, use the following troubleshooting chart to remedy or isolate the cause. If you are unable to remedy the problem, call your local Muzak affiliate or Muzak Customer Services at **800 223.0686**.

SYMPTOM/PROBLEM	POSSIBLE CAUSE/SOLUTION
No power	AC cord loose or not plugged in Blown fuse — see next page
Tape does not play	Power not on Cassette door not fully closed Jamed cassette — see next page Broken or damaged tape — see next page Defective mechanism — see page 16
Low or no volume	Speaker wire disconnected Mismatched output connection — see page 14 Volume control turned down Dirty playback head — see page 12 Separate amplifier tuned down
Muffled sound	Dirty playback head — see page 12 Damaged cassette — see page 16
Music plays slowly	Dirty capstan/pinch roller — see page 12 Consumer cassette — see page 15



## what you should do

### FUSE REPLACEMENT PROCEDURE

1. Remove the AC power cord from the AC inlet on the CP-2500 rear panel.
2. The fuse holder is in a small compartment directly under the AC power cord.
3. Pry the fuse holder open with your fingernail or straight tool such as a pen or small screwdriver.
4. Remove the blown fuse and replace it with the spare fuse that comes with the CP-2500. This fuse is referred to as a GMA or 5 X 20 mm type fuse. Additional fuses may be obtained from your local Muzak Affiliate, or from your local Radio Shack store (part # 270-1051).

**CAUTION** — DO NOT USE SLO-BLO OR TIME DELAY FUSES.

### REMOVING A JAMMED CASSETTE

1. Press the Eject button.
2. **Do not force open the cassette door.** If the cassette door won't open, call your local Muzak Affiliate.
3. If the cassette door will open, gently lift the cassette out.
4. Remove any tape that has wrapped around the capstan shafts.
5. **Do not use excessive force to remove the cassette.** If the cassette cannot be removed, call your local Muzak Affiliate.

### LOW VOLUME CAUSED BY MISMATCHED AUDIO OUTPUT CONNECTION

1. If your speaker wires are connected to the 4  $\Omega$  terminals, switch the power off and connect them to the 70 V terminals.

CONTINUED

2. Switch the power on again and play a cassette.
3. If this fails to correct the problem, call your local Muzak Affiliate.

#### **THE CP-2500 PLAYS AT NON-STANDARD SPEED**

1. The CP-2500 plays at a non-standard speed. Regular consumer cassettes will not play correctly on the CP-2500.

## customer services and shipping

Should any problems occur with your CP-2500, be sure to consult your local Muzak Affiliate or Muzak Headquarters before sending the deck anywhere for repair. This will help to identify any specific problems and possibly avoid the necessity of shipment altogether. If shipment to Muzak becomes necessary, please call the Muzak Customer Services Department at **800 223.0686** for a **Return Authorization (RA) Number** before shipping the deck to Muzak. When packaging the deck for service, be sure to enclose a complete description of any problems with the player along with your:

- RETURN ADDRESS
- NAME
- PHONE NUMBER
- (RA) RETURN AUTHORIZATION NUMBER

Include a copy of the original sales receipt for warranty verification, if applicable. Never ship the deck in any shipping carton other than the original or a replacement carton supplied by Muzak.

**CAUTION** — MAKE SURE THAT ALL THE PROTECTIVE SHIPPING LINERS ARE INSTALLED. DO NOT PACK THE DECK IN STYROFOAM "PEANUTS" OR SIMILAR LOOSE PACKING MATERIAL. THEY ALLOW THE DECK TO SHIFT AROUND IN SHIPPING.

Players damaged as a result of improper packaging will be the responsibility of the shipper. Avoid the use of carriers who do not offer proof of delivery or tracing services. Insure or declare the player for its full value.

**For more information, please call Customer Service at 800 223.0686.**



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**creating experiences with audio architecture**

2901 Third Avenue Suite 400 Seattle, WA 98121 800 223.0686 [www.muzak.com](http://www.muzak.com)